



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R10-OAR-2010-1071, FRL-9904-68-Region 10]

**Approval and Promulgation of Implementation Plans; State of Washington; Regional Haze
State Implementation Plan; Federal Implementation Plan for Best Available Retrofit
Technology for Alcoa Wenatchee**

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to partially disapprove a Washington Regional Haze State Implementation Plan (RH SIP) element submitted by the State of Washington (the State) on December 22, 2010, that exempted Alcoa's Wenatchee Works aluminum smelting facility (Alcoa Wenatchee facility or Wenatchee facility), located near Wenatchee, Washington, from the Clean Air Act's Best Available Retrofit Technology (BART) requirements. On December 26, 2012, the EPA proposed to approve, along with proposed action on other SIP elements, the State's determination that the Alcoa Wenatchee facility is exempt from BART requirements. The EPA received adverse comments regarding the dispersion modeling used for this determination. After further review, the EPA now proposes to disapprove the State's determination that the facility is not subject to BART and proposes to find that the Wenatchee facility is subject to BART. The EPA is also proposing a BART determination for the facility through a Federal Implementation Plan (FIP). This *Federal Register* document also announces the availability of new information regarding Alcoa's ability to afford limestone slurry forced oxidation (LSFO) sulfur dioxide (SO₂) control technology at the

Intalco Aluminum Corporation facility in Ferndale, Washington (Intalco). Also available for public review is new air quality dispersion modeling regarding the visibility improvement assessment for the BART Alternative for the Tesoro Refining and Marketing refinery in Anacortes, Washington (Tesoro).

DATES: *Comments:* Written comments must be received at the address below on or before February 20, 2014.

Public Hearing: A public hearing is offered to provide interested parties the opportunity to present information and opinions to the EPA concerning today's proposal. Comments are limited to the specific elements and new information discussed in today's proposal and the comment period for other aspects of the Washington State Regional Haze Plan is not reopened. Interested parties may also submit written comments, as discussed below. If you wish to request a hearing and present testimony, you should notify Mr. Steve Body on or before January 8, 2014 and indicate the nature of the issues you wish to provide oral testimony during the hearing. Mr. Body's contact information is found in **FOR FURTHER INFORMATION CONTACT** below. At the hearing, the hearing officer may limit oral testimony to 5 minutes per person. The hearing will be limited to the subject matter of this proposal, the scope of which is discussed below. The EPA will not respond to comments during the public hearing. When we publish our final action, we will provide a written response to all written or oral comments received on the proposal. The EPA will not be providing equipment for commenters to show overhead slides or make computerized slide presentations. A transcript of the hearing and written statements will be made available for copying during normal working hours at the address listed for inspection of documents, and also included in the Docket. Any member of the public may provide written or

oral comments and data pertaining to our proposal at the hearing. Note that any written comments and supporting information submitted during the comment period will be considered with the same weight as any oral comments presented at the public hearing. If no requests for a public hearing are received by close of business on January 8, 2014, a hearing will *not* be held; please contact Mr. Body at (206) 553-0782 to find out if the hearing will actually be held or if it was cancelled for lack of any request to speak.

ADDRESSES: Public Hearing: A public hearing, if requested, will be held January 21, 2014, beginning at 6:00 PM at the Washington Department of Ecology Offices, Room #34-36, 300 Desmond Drive, Lacey, WA 98503.

Comments: Submit your comments, identified by Docket ID No. EPA-R10-OAR-2010-1071, by one of the following methods:

- www.regulations.gov. Follow the on-line instructions for submitting comments.
 - E-mail: R10-Public_Comments@epa.gov
 - Mail: Steve Body, EPA Region 10, Office of Air, Waste and Toxics (AWT-107), 1200 Sixth Avenue, , Suite 900Seattle, WA 98101
 - Hand Delivery: EPA Region 10 Mailroom, 9th Floor, 1200 Sixth Avenue, Suite 900, Seattle, WA 98101. Attention: Steve Body, Office of Air, Waste and Toxics, AWT-107.
- Such deliveries are only accepted during normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-R10-OAR-2010-1071. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI)

or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through www.regulations.gov or e-mail. The www.regulations.gov Web site is an “anonymous access” system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to the EPA, without going through www.regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the www.regulations.gov index. Although listed in the index, some information is not publicly available (e.g., CBI or other information whose disclosure is restricted by statute). Certain other material, such as copyrighted material, will be publicly available only in hard copy form. Publicly available docket materials are available either electronically at www.regulations.gov or in hard copy at the Office of Air, Waste and Toxics, EPA Region 10, 1200 Sixth Avenue, Seattle, WA 98101.

FOR FURTHER INFORMATION CONTACT: Steve Body at telephone number (206) 553-0782, body.steve@epa.gov, or the above EPA, Region 10 address.

SUPPLEMENTARY INFORMATION: Throughout this document whenever “we,” “us,” or “our” is used, we mean the EPA. Information is organized as follows:

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I. Overview and Summary of this Proposed Action

On December 22, 2010, the State of Washington submitted a RH SIP to address regional haze for the first implementation period. This plan was submitted to meet the requirements of Clean Air Act (CAA) sections 169A and 169B and EPA's implementing regulations at 40 CFR 51.308 that require states to prevent any future and remedy any existing man-made impairment of visibility in mandatory Class I areas. On December 26, 2012, the EPA published a rule in the Federal Register proposing to approve the State's determination that the Alcoa Wenatchee facility is exempt from federal BART requirements. 77 FR 76174. At the same time, the EPA

also: 1) proposed to approve in part the Washington RH SIP as meeting most of the requirements of the regional haze program; 2) proposed a limited approval and limited disapproval of the SO₂ Best Available Retrofit Technology (BART) determination for Intalco Aluminum Corporation (Intalco) facility and proposed a Better-than-BART alternative (BART Alternative); and 3) proposed to disapprove the BART determination for oxides of nitrogen (NO_x) for five BART emission units at the Tesoro Refining and Marketing refinery (Tesoro) and proposed a BART Alternative.

The Wenatchee facility is a primary aluminum smelter, located approximately ten miles south of Wenatchee, Washington, on the Columbia River. The State's BART exemption determination, that would exempt the Alcoa Wenatchee facility from BART requirements, was based on air quality dispersion modeling. As explained further below, the EPA received adverse comments on its proposal to approve the State's determination to exempt the Wenatchee facility from BART requirements. After further review and consideration, we now propose to disapprove that exemption determination and propose that the facility is subject to BART. We are also proposing a BART determination for the facility.

This Federal Register notice also announces new information available for public review regarding whether Alcoa can afford LSFO SO₂ control technology as BART for Alcoa's Intalco facility in Ferndale, Washington. As part of the December 26, 2012 action, we proposed that Intalco could not afford LSFO and referenced an affordability assessment of the Intalco facility and Alcoa Corporation. *See Intalco BART SO₂ Affordability Assessment, November, 2012 (2012 Affordability Assessment)*. As explained in further detail below, we received adverse comments on the affordability determination requesting that we update the affordability assessment with current information and expressing concern with the use of information that was

not publically available. In response to these comments, we have obtained updated information, revised the 2012 Affordability Assessment, and have made a final confidential business information (CBI) determination. *See Revised Intalco BART SO₂ Affordability Assessment, September 2013 and Intalco Final CBI Determination, respectively.* This information, including the aforementioned documents, is in the docket for this proposed action and is available for public review and comment.

We also received adverse comments regarding the proposed determination that the BART Alternative for the Tesoro refining facility in Anacortes, Washington, provides for greater reasonable progress than BART. The initial demonstration was based on comparing the emissions allowed under BART to the emissions allowed under the BART Alternative. The comments suggested that air quality dispersion modeling should be used to make this demonstration. As explained below, Tesoro conducted this dispersion modeling and it is now in the docket for this action and is available for public review and comment.

The EPA will respond to all comments received on the December 26, 2012 proposal, that are not discussed today, and will take final action on the remaining Washington RH SIP elements in a future Federal Register notice.

II. Background for the EPA's Proposed Action

In the CAA Amendments of 1977, Congress established a program to protect and improve visibility in national parks and wilderness areas. *See CAA section 169A.* Congress amended the visibility provisions in the CAA in 1990 to focus attention on the problem of regional haze. *See CAA section 169B.* The EPA promulgated regulations in 1999 to implement sections 169A and 169B of the Act. These regulations require states to develop and implement SIPs to ensure reasonable progress toward improving visibility in mandatory Class I Federal

areas¹ (Class I areas). 64 FR 35714 (July 1, 1999); *see also* 70 FR 39104 (July 6, 2005) and 71 FR 60612 (October 13, 2006).

A. Definition of Regional Haze

Regional haze is impairment of visual range or colorization caused by emission of air pollution produced by numerous sources and activities, located across a broad regional area. The sources include, but are not limited to, major and minor stationary sources, mobile sources, and area sources, including non-anthropogenic sources. Visibility impairment is primarily caused by fine particulate matter (PM_{2.5}), particles with an aerodynamic diameter of less than 2.5 micrometers, or secondary aerosol formed in the atmosphere from precursor gases (e.g., SO₂, NO_x, and in some cases, ammonia and volatile organic compounds). Atmospheric PM_{2.5} reduces clarity, color, and visual range of visual scenes. Visibility-reducing PM_{2.5} is primarily composed of sulfate, nitrate, organic carbon compounds, elemental carbon, and soil dust, and impairs visibility by scattering and absorbing light. PM_{2.5} can also cause serious health effects and mortality in humans, and contributes to environmental effects such as acid deposition and eutrophication.²

Data from the existing visibility monitoring network, the “Interagency Monitoring of Protected Visual Environments” (IMPROVE) monitoring network, show that visibility impairment caused by air pollution occurs virtually all the time at most national parks and

¹ Areas designated as mandatory Class I Federal areas consist of national parks exceeding 6000 acres, wilderness areas and national memorial parks exceeding 5000 acres, and all international parks that were in existence on August 7, 1977. 42 U.S.C. 7472(a). In accordance with section 169A of the CAA, EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility is identified as an important value. 44 FR 69122 (November 30, 1979). The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions. 42 U.S.C. 7472(a). Although states and tribes may designate as Class I additional areas which they consider to have visibility as an important value, the requirements of the visibility program set forth in section 169A of the CAA apply only to “mandatory Class I Federal areas.” Each mandatory Class I Federal area is the responsibility of a “Federal Land Manager.” 42 U.S.C. 7602(i). When we use the term “Class I area” in this action, we mean a “mandatory Class I Federal area.”

² See 64 FR at 35715.

wilderness areas. Average visual range in many Class I areas in the Western United States is 100-150 kilometers, or about one-half to two-thirds the visual range that would exist without manmade air pollution.³ Visibility impairment also varies day-to-day and by season depending on variation in meteorology and emission rates.

B. Regional Haze Rules and Regulations

In section 169A of the 1977 CAA Amendments, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the "prevention of any future, and the remedying of any existing, impairment of visibility in Class I areas which impairment results from manmade air pollution." CAA section 169A(a)(1). On December 2, 1980, the EPA promulgated regulations to address visibility impairment in Class I areas that is "reasonably attributable" to a single source or small group of sources, i.e., "reasonably attributable visibility impairment". 45 FR 80084. These regulations represented the first phase in addressing visibility impairment. The EPA deferred action on regional haze that emanates from a variety of sources until monitoring, modeling, and scientific knowledge about the relationships between pollutants and visibility impairment were improved.

Congress added section 169B to the CAA in 1990 to address regional haze issues. The EPA promulgated a rule to address regional haze on July 1, 1999 (64 FR 35713) (the Regional Haze Rule or RHR). The RHR revised the existing visibility regulations by adding provisions addressing regional haze impairment and established a comprehensive visibility protection program for Class I areas. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in the EPA's visibility protection regulations at 40 CFR 51.300-309. Some of the main elements of the regional haze requirements are summarized in section III of this

³ *Id.*

notice. The requirement to submit a regional haze SIP applies to all 50 states, the District of Columbia, and the Virgin Islands.⁴ 40 CFR 51.308(b) required states to submit the first implementation plan addressing regional haze visibility impairment no later than December 17, 2007.

III. Requirements for Regional Haze SIPs Related to this Proposal

A. The CAA and the Regional Haze Rule

Regional haze SIPs must assure reasonable progress towards the national goal of achieving natural visibility conditions in Class I areas. Section 169A of the CAA and the EPA's implementing regulations require states to establish long-term strategies for making reasonable progress toward meeting this goal. SIPs must also give specific attention to certain stationary sources that were in existence on August 7, 1977, but were not in operation before August 7, 1962, and require these sources, where appropriate, to install BART controls for the purpose of eliminating or reducing visibility impairment. The specific regional haze SIP requirements are discussed in further detail below.

B. Best Available Retrofit Technology

Section 169A of the CAA directs states to evaluate the use of retrofit controls at certain larger, often uncontrolled, older stationary sources in order to address visibility impacts from these sources. Specifically, section 169A(b)(2)(A) of the CAA requires states to revise their SIPs to contain such measures as may be necessary to make reasonable progress towards the natural visibility goal, including a requirement that certain categories of existing major stationary sources⁵ built between 1962 and 1977 procure, install, and operate the "Best Available Retrofit

⁴Albuquerque/Bernalillo County in New Mexico must also submit a regional haze SIP to completely satisfy the requirements of section 110(a)(2)(D) of the CAA for the entire State of New Mexico under the New Mexico Air Quality Control Act (section 74-2-4).

⁵The set of "major stationary sources" potentially subject to BART is listed in CAA section 169A(g)(7).

Technology” as determined by the state. States are directed to conduct BART determinations for such sources that may be anticipated to cause or contribute to any visibility impairment in a Class I area. Rather than requiring source-specific BART controls, states also have the flexibility to adopt an emissions trading program or other alternative program as long as the alternative provides greater reasonable progress towards improving visibility than BART.

On July 6, 2005, the EPA published the *Guidelines for BART Determinations Under the Regional Haze Rule* at appendix Y to 40 CFR part 51 (hereinafter referred to as the “BART Guidelines”) to assist states in determining which of their sources should be subject to the BART requirements and in determining appropriate emission limits for each applicable source. In making a BART-applicability determination for a fossil fuel-fired electric generating plant with a total generating capacity in excess of 750 megawatts, a state must use the approach set forth in the BART Guidelines. A state is encouraged, but not required, to follow the BART Guidelines in making BART determinations for other types of sources.

States must address all visibility-impairing pollutants emitted by a source in the BART determination process. The most significant visibility-impairing pollutants are SO₂, NO_x, and PM_{2.5}. The EPA has indicated that states should use their best judgment in determining whether volatile organic compounds or ammonia compounds contribute to visibility impairment in Class I areas.

Under the BART Guidelines, states may select an exemption threshold value to determine those BART-eligible sources that are not subject to BART. A BART-eligible source with an impact below the threshold would not be expected to cause or contribute to visibility impairment in any Class I area. The state must document this exemption threshold value in the SIP and must state the basis for its selection of that value. Any source with emissions that model

above the threshold value would be subject to a BART determination review. The BART Guidelines acknowledge varying circumstances affecting different Class I areas. In setting an exemption threshold, States should consider the number of emission sources affecting the Class I areas at issue and the magnitude of the individual sources' impacts. Generally, an exemption threshold set by the state should not be higher than 0.5 deciviews (dv).

In their SIPs, states must identify BART-eligible sources, as well as those BART-eligible sources that have a visibility impact in any Class I area above the exemption threshold established by the state and are therefore subject to BART. States must document their BART control analysis and determination for all sources subject to BART.

The term "BART-eligible source," as used in the BART Guidelines, means the collection of individual emission units at a facility that together comprise the BART-eligible source. In making a BART determination, section 169A(g)(2) of the CAA requires that states consider the following factors: (1) the costs of compliance, (2) the energy and non-air quality environmental impacts of compliance, (3) any existing pollution control technology in use at the source, (4) the remaining useful life of the source, and (5) the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. States are free to determine the weight and significance to be assigned to each factor.

The regional haze SIP must include source-specific BART emission limits and compliance schedules for each source subject to BART. Once a state has made its BART determination, the BART controls must be installed and in operation as expeditiously as practicable, but no later than 5 years after the date the EPA approves the regional haze SIP. CAA section 169A(g)(4); 40 CFR 51.308(e)(1)(iv). In addition to what is required by the RHR, general SIP requirements mandate that the SIP must also include all regulatory requirements

related to monitoring, recordkeeping, and reporting for the BART emission limits. States have the flexibility to choose the type of control measures they will use to meet the requirements of BART.

IV. The EPA's Analysis of the BART Exemption for the Alcoa Wenatchee Facility

The Alcoa Wenatchee facility produces aluminum from alumina using an electrochemical reduction process commonly known as the Hall-Heroult process. The facility is capable of producing 184,000 metric tons of aluminum per year. The facility currently consists of a carbon anode production plant, four prebake aluminum potlines, and an ingot casting facility. It initially opened in 1952 with four potlines. These four potlines and associated processes were constructed prior to the BART window and are not BART-eligible. In 1967, a fifth potline was added along with increased anode production capability and materials handling operations. The equipment associated with this expansion was constructed within the BART-eligibility window and is therefore BART-eligible. In 2004, one of the original potlines was decommissioned, resulting in the current operation of four potlines.

The Alcoa Wenatchee facility is located in a river valley and sits on the banks of the Columbia River at an altitude of approximately 740 feet. The river valley is approximately 1.8 miles wide and is surrounded by bluffs rising to 760 feet above the valley floor immediately adjacent to the river. The Cascade Mountain Range is to the west and is generally running north to south with peaks reaching more than 9000 feet. The Alpine Lakes Wilderness Area is located approximately 28 miles (45 kilometers (km)) west of the Alcoa Wenatchee facility, at the crest of the Cascade Mountain Range, and is characterized by complex terrain.

As explained above, the BART Guidelines allow states to exempt sources from a BART determination if the source cannot reasonably be anticipated to cause or contribute to visibility

impairment in any Class I area. The State of Washington established an exemption threshold of 0.5 dv as the level above which a BART-eligible source may reasonably be considered to contribute to visibility impairment in any Class I area.

In the Washington RH SIP, the State determined that the Wenatchee facility is exempt from BART because the facility's modeled visibility impact in all Class I areas was less than 0.5 dv. At the State's request, Alcoa initially conducted dispersion modeling following the three-state modeling protocol⁶ agreed upon by the EPA, Region 10 and using an EPA-approved version of the dispersion model CALPUFF⁷, to model the visibility impact of the BART-eligible sources and to determine whether the facility is subject to BART. The State required all BART-eligible sources in Washington to follow the protocol to determine whether their impacts are greater than the BART exemption threshold.

According to the agreed upon protocol, the modeling should be conducted with the surface wind field having a 4 km grid cell resolution. Alcoa completed the exemption modeling using CALPUFF version 6.112; Level 060412. Model results showed that the 98th percentile, or twenty-second highest visibility impact value, over a three-year period at Alpine Lakes Wilderness Area was predicted to be 0.6 dv, exceeding the exemption threshold of 0.5 dv. As a result, the facility would be subject to BART. In the State's view, however, the 4 km grid resolution did not provide realistic wind flow estimates between the Alcoa Wenatchee facility and the Alpine Lakes Wilderness Area.

Alcoa re-ran the model using CALPUFF with 0.5 km grid resolution and the predicted visibility impact decreased to 0.4 dv, under the 0.5 dv exemption threshold. In Appendix I of the

⁶The three-state modeling protocol was an agreement between Idaho, Oregon, and Washington, the FLMs and EPA-Region 10. This protocol was submitted with the RH SIP and is also included as a separate document in the docket for this action.

⁷ CALPUFF is a Gaussian puff dispersion model used to estimate pollutant concentrations.

Washington RH SIP, the State provided information to explain why the finer grid resolution of 0.5 km was more appropriate. As explained in the Washington RH SIP, the State then determined that the facility was not subject to BART.

In our December 26, 2012 action, we proposed to approve the exemption modeling for the Wenatchee facility and the State's determination that the facility is exempt from BART. 77 FR 76147. We received adverse comments on that part of the proposal. The comments claimed that the Wenatchee facility was improperly exempted from BART review and requested that EPA disapprove Washington's determination that the Wenatchee facility is not subject to BART. The comments indicated that the use of fine grid modeling (0.5 km grid resolution) did not follow the agreed upon three-state protocol, that the higher grid resolution underestimates the visibility impacts, and that allowing its use in this instance is contrary to numerous prior statements by the EPA. One comment cited an exchange of communications between the EPA, FLMs, and the State that was critical of using 0.5 km grid cells as not technically justified or in accordance with the agreed upon modeling protocol, and requested that these prior communications be included in the public record.⁸

In response to these comments, the EPA reevaluated the State's BART exemption determination. The EPA has previously addressed the use of CALMET⁹ horizontal grid resolutions less than 4 km. *See*, EPA, Model Clearinghouse Review of CALPUFF Modeling Protocol for BART, Memorandum from Tyler Fox, EPA, May 15, 2009. (May 15, 2009, Model Clearinghouse Memo). This memo discusses, among other items, the proper justification for adjusting the modeled wind field from the default 4 km horizontal grid resolution to a finer grid resolution. While the May 15, 2009, Model Clearinghouse Memo does not automatically

⁸ We have included the correspondence in the docket as requested.

⁹ CALMET is a generalized-non-steady state air quality model used to characterize meteorology and is used in conjunction with CALPUFF to estimate visibility impacts from stationary sources.

preclude the use of a higher (finer) resolution meteorological grid, it discusses two conditions that should be addressed in considering the use of a finer meteorological grid. First, the memo explains that higher resolution data does not necessarily improve the model performance, but may in fact degrade it for some predicted meteorological parameters. Therefore, the memo states that "...scientific evidence to support the claim that a 1 km CALMET grid resolution increases the objective accuracy of the final wind field" is needed. Second, because CALMET's ability to independently capture the full three dimensional structure of complex flows is limited, there is the need for high resolution numerical weather prediction (NWP) data or a density of representative observational data to accurately simulate the meteorological fields. *See* May 15, 2009 Model Clearinghouse Memo at 4.

Appendix I of the Washington RH SIP presents the State's rationale for using a CALMET fine grid resolution of 0.5 km to model the Alcoa Wenatchee facility. However, Appendix I provides no objective evaluation of the fine grid modeling necessary for use in the RH SIP. The State's justification discussed the two conditions contained in the May 15, 2009, Model Clearinghouse Memo. To address the first condition, the State presented the wind fields layered onto topographic maps at 4 km and 0.5 km resolutions and concluded that at 0.5 km, the wind fields conform to the topographic features better than at 4 km. The State also included a graphic of the terrain profile at 12 km, 4 km, 0.5 km and 0.1 km resolution, which showed that at each succeeding finer grid resolution the ridges and valleys were more resolved. When the State addressed the second condition, however, it acknowledged that there were no meteorological observational data between the Alpine Lakes Wilderness Area and the Alcoa Wenatchee facility. It further acknowledged that there is "no direct way to assess the improvement in the wind field by using the finer grid." Washington RH SIP, Appendix I at I-4. Instead, the State provided a

qualitative discussion based on a combination of experience and scrutiny of the wind fields computed at the fine grid resolution and then concluded that the 0.5 km grid resolution provided a more accurate result in this instance. But the State failed to provide either high resolution NWP data or a density of representative data. An objective evaluation of the performance of the NWP data set was not performed. Accordingly, the justification provided in the Washington RH SIP Appendix I fails to demonstrate that CALMET had adequately captured the non steady-state meteorological conditions. Consequently, the second condition in the policy memorandum was not satisfied by the State. *See* EPA's Evaluation of Appendix I in the Washington Regional Haze State Implementation, November 21, 2013.

We recognize the effort the State took to further assess the nuances of the complex meteorology, terrain, modeled wind fields and model grid spacing in an attempt to demonstrate that the results from the State's non-guideline approach are more accurate than the results from the approved approach. The 4 km and 0.5 km grid modeling predict visibility impacts at the Alpine Lakes Wilderness Area of 0.6 dv and 0.4 dv respectively from the Alcoa Wenatchee facility. This difference of just 0.2 dv may, or may not be significant in terms of the accuracy of the CALPUFF model in general, or in justifying the appropriateness of one meteorological wind field representation over another. In this case, however, the difference is determinative in demonstrating whether the facility is exempt from BART requirements. Without an objective evaluation of the fine grid modeling, as required by the Model Clearinghouse Memo, we believe that conservatism is warranted in this instance, where the purpose of the modeling is solely to determine if the source contributes to visibility impairment such that it should be subject to BART review.

Consideration of the modeling conducted, EPA's prior evaluations of CALPUFF and CALMET modeling using fine grid resolution, and the purpose for which the modeling was conducted all lead us to conclude that relying on the results from the fine grid modeling to exempt the facility from further BART review is not warranted in this instance. Therefore, we conclude that the State has not demonstrated that this facility is exempt from BART. We are proposing to disapprove the State's determination that the facility is exempt from BART and propose that the Alcoa Wenatchee facility is subject to BART. Additionally, we are proposing a BART FIP for the Alcoa Wenatchee facility.

V. Proposed BART Determination for the Alcoa Wenatchee Facility

There are ten emission units at the Alcoa Wenatchee facility that are BART-eligible: potline 5, one anode bake furnace, three ingot furnaces, two coke-handling operations, and three alumina-handling operations, including rail car unloading. The emission rates for the BART-eligible units are presented in the exemption modeling report, "CALPUFF Modeling Report for BART Analysis at Alcoa Inc. – Wenatchee Facility in Washington," September 2007, Table 2-3. The emission rates, converted to tons per year (t/y), are presented in the Table below.

Table 1 BART-eligible Unit Emissions

Source Name	PM t/y	SO₂ t/y	NO_x t/y
Potline 5 Emissions	148.9	1000.8	4.6
Ingot Furnace 1	9.5	0.0	0.7
Ingot Furnace 2	9.9	0.0	0.7
Ingot Furnace 11	17.7	0.0	1.1
Anode Bake Furnace	0.4	250.3	34.8
Dry Coke Scrubber	1.4	0.0	0.0
Dust Collector #2	11.5	0.0	0.0
Alumina Handling 21	0.3	0.0	0.0
Alumina Handling 19C	0.3	0.0	0.0
Alumina Handling 43E	16.7	0.0	0.0
TOTALS	216.6	1251.1	41.9

BART Determination Approach

The EPA completed a BART review for the BART-eligible emission units at the Alcoa Wenatchee facility. In making the BART determination for this facility, the EPA considered the following:

- Existing air pollution controls for each BART emission unit;
- Technically feasible and available control technologies with higher control efficiency than existing controls;
- Costs of compliance;
- Energy and non-air environmental impacts; and
- Visibility improvement

A memorandum to the files included in the docket to this action contains the BART review. *See* memorandum dated December 10, 2013 from Steve Body, Alcoa Wenatchee Works BART Determination. This memorandum contains a more detailed discussion of our review and consideration of the five BART factors. The Alcoa Intalco facility in Ferndale, Washington and the Alcoa Wenatchee facility use the same aluminum smelting process with similar pollutant concentrations and exhaust gases temperatures. Because there are similarities between some of the BART-eligible units at the Alcoa Intalco facility and the BART-eligible units at the Alcoa Wenatchee facility, our BART determination for the Wenatchee facility uses, where appropriate, data and information from our Intalco BART analysis and the Washington RH SIP (which included an ENVIRON Corporation report (ENVIRON report) that contained a BART analysis for Intalco). In some instances, the data and information from the Intalco analysis was updated or scaled as needed for the Wenatchee facility. Additionally, as explained

below, in some instances, the consideration of one factor alleviated the need for further evaluation of a control technology and a streamlined analysis was appropriate. For example, if an emission unit is currently controlled by the most stringent control technology available, additional technologies need not be considered and a comprehensive analysis of the remaining factors is not necessary.

The Alcoa Wenatchee facility operates under a State-issued Title V operating permit, No. 000068-0, issued on March 1, 2010 (Alcoa Wenatchee Operating Permit). Where a proposed BART determination is also a requirement in the current operating permit, but the requirement is not yet federally enforceable, the proposed BART determination will make the requirement federally enforceable and consistent with the requirements in the permit.

Anode Bake Furnace:

Process Description. Carbon anodes are used in the electric arc furnaces (pots) used to produce aluminum. They are manufactured on site from purchased calcined petroleum coke and anode butt material (residual anode material after its useful life and defective anodes) that is crushed and sized, mixed together with pitch, and formed into blocks called “green anodes.” The green anodes are then baked in the anode bake furnace to achieve the structural integrity necessary for use in the potlines.

The Alcoa Wenatchee facility operates two anode bake furnaces, but due to their dates of construction, only one is BART-eligible. Both furnaces are fueled with natural gas and consist of a series of formed firebrick-lined pits. Exhaust gases from both furnaces are collected in an underground duct, combined and sent to the A446 anode bake scrubber. Thus, the exhaust gases from the BART-eligible and non-BART-eligible emission units are combined into a common

duct and control device. The exhaust gases contain, among other pollutants, the visibility-impairing pollutants SO₂, NO_x, and PM_{2.5}.

Existing Control. The anode bake furnaces' emissions are controlled by the A446 anode bake scrubber, a dry alumina scrubber followed by fabric filtration. Fabric filters generally reflect the highest level of control for PM_{2.5}, reducing emissions by more than 99 percent. Recent source tests for PM_{2.5} emission rates from the A446 anode bake scrubber reflect a properly operating fabric filter. *See* CAA Site Visit Report, July 12, 2013, and Alcoa Wenatchee Works- Summary of Emission Test Data for BART-Eligible Emission Units. The A446 anode bake scrubber does not control for SO₂ or NO_x.

Control Options. Because the anode bake furnace emission characteristics (i.e. pollutant concentration and temperature) of SO₂ and NO_x are similar to those from the potlines, the SO₂ and NO_x BART control options considered for the potlines are also applicable to the anode bake furnace. However, the emission gas flow rates for the anode bake furnaces are significantly less than the potline emission gas flow rates, only a small fraction of the airflow volume of the Potline 5 Gas Treatment Center (GTC). Gas flow rate dictates the size (and cost) of a potential control technology.

Due to the operational similarities and similar exhaust gas characteristics between the anode bake furnaces at the Wenatchee facility and the Intalco facility, control options for the anode bake furnaces at the Wenatchee facility rely in large part on the analytical work completed for the Intalco anode bake furnaces and potlines. *See* Appendix L of the Washington RH SIP, the ENVIRON Report, and the EPA's proposed BART determination for the Intalco anode bake furnace.

SO₂ Control Options. After a review of the EPA's proposed BART determination for the Intalco facility and the BART analysis in the ENVIRON Report, a wet scrubber was identified as the only technically feasible add-on control option for the Wenatchee facility. Emissions of SO₂ from the Intalco anode bake furnaces are 181 t/y, while emissions from the Wenatchee facility bake furnaces are 250 t/y. However, as discussed above, the Wenatchee emissions are from both the BART and non-BART units that are ducted to a common stack.

At Alcoa's Intalco facility, the ENVIRON Report (and Appendix L of the Washington RH SIP) estimated that the installed capital cost of a retrofit wet scrubber that would remove 95 percent of the SO₂ from the anode bake furnace exhaust would be approximately \$29.5 million with a total annualized cost of \$6.3 million per year. The ENVIRON report explained that these costs corresponded to a cost-effectiveness of \$36,400 per ton of SO₂ removed. *See* ENVIRON Report, Table 5-3; Washington RH SIP, Appendix L, pg. L-73. With the greater gas flow rate at the Wenatchee facility, the capital and annual operating costs would be higher, but the cost-effectiveness values would only be slightly lower. Other than the gas flow rate, there are no significant differences between the emission characteristics, current control technology, and physical design of the anode bake furnaces at the Intalco facility and at the Wenatchee facility that would lead to significantly different cost-effectiveness values. Consequently, we believe that wet scrubbing of SO₂ would not be cost-effective for the Wenatchee anode bake furnace.

In addition to wet scrubbing, a pollution prevention option would be to establish a maximum sulfur content of the anode coke at 3% for the anode bake furnaces and potlines. The sulfur limit in anode coke would limit the emissions from the anode bake furnaces and, because the anodes are consumed in the potlines, would also result in reduced SO₂ emissions from the potlines. The current permit for the Wenatchee facility limits the sulfur content of anode coke

for potlines 1, 2, and 3 to 3%. *See* Alcoa Wenatchee Air Operating Permit, condition D.12.

There is no such restriction on the anodes made for potline 5. We believe that requiring the same limit for coke used to make anodes for potline 5 would add no cost to the operation, but would ensure that SO₂ emissions from the anode bake furnaces would always reflect the use of no more than 3% sulfur coke.

PM Control Options. Dry alumina injection with fabric filtration currently controls PM emissions from the anode bake furnaces. The installed fabric filter reflects high efficiency control for PM. An electrostatic precipitator (ESP) is also a technically feasible control option, with a similar PM capture efficiency to fabric filtration. Because the control-effectiveness of these two options is largely equivalent, further evaluation of an ESP is not necessary. Other possible controls, such as cyclones, inertial separators, and wet scrubbers are less effective at removing small and submicron particles than fabric filters and ESPs.

There is a current PM emission limit in the Alcoa Wenatchee Air Operating Permit of 0.1 grains per dry standard cubic foot (gr/dscf) for anode bake furnaces. *See* permit condition B.1. We believe this limit does not accurately represent the performance of a properly maintained and operated fabric filter. A review of source tests conducted in 2011 to 2013 indicates that the A446 scrubber consistently controls PM emissions to concentrations of less than 0.01 gr/dscf. Therefore, because a BART emission limitation must be “based on the degree of reduction *achievable* through the application of the best system of continuous emission reduction,” *see* 40 CFR 51.301 (emphasis added), we are proposing to set a PM BART limit of 0.01 gr/dscf for the anode bake furnaces.

NO_x Control Options. The evaluation of available NO_x control options for the anode bake furnaces, including the control technology descriptions, is based on the BART determination

contained in the Washington RH SIP, the ENVIRON Report, and the EPA's proposed BART determination for the Intalco facility.

The amount of NO_x emitted from a natural gas-fired anode bake furnace varies depending on operating practices and burner design. The traditional methods of preventing NO_x formation using staged combustion or low NO_x burners are not applicable for the Alcoa Wenatchee anode bake furnaces because of the unique configuration of the furnaces, with fuel injected at several points in narrow flues. However, advanced firing systems that measure and regulate fuel flow precisely using a computerized control system can reduce total fuel usage. By reducing fuel usage, advanced firing also reduces NO_x emissions. Prevention of NO_x formation using a more efficient advanced firing control system is technically feasible for the anode bake furnaces. While specific cost estimates were not determined for an advanced firing system, we did determine that it would entail the purchase and installation of equipment and computers for measuring and metering a variety of parameters. Total gas usage could be reduced by up to 20%, which would result in a corresponding 20% reduction in NO_x emissions, or approximately 7 t/y. This reduction represents a 0.05% reduction in emissions from all BART units that would result in negligible visibility improvement in any Class I area. Thus, we believe it is unreasonable to require an advanced firing system at the Wenatchee facility.

The LoTOXTM system is the patented technology of Linde Industrial Gases. At a control efficiency of 90%, the resulting reduction in NO_x emissions would be 31 t/y if it was installed at the Wenatchee facility. As explained in the Alcoa Wenatchee Works BART Determination memorandum, dated December 10, 2013, the cost per ton of removal is expected to be in excess of \$18,000 per ton. Due to the extremely high cost and only a 31 t/y NO_x emission reduction, it is unreasonable to require emission limits based on LoTOXTM at the Wenatchee facility.

BART is therefore proposed to be the existing operating conditions of firing the furnaces on natural gas. There is no information available that can be used to establish a numerical emission limitation, so the proposed NO_x BART requirement for the anode bake furnace will be a fuel specification that requires that only natural gas may be combusted in the anode bake furnaces.

Proposed BART Limits for the Anode Bake Furnaces

PM: 0.01 gr/dscf

SO₂: 3% sulfur content in anode coke

NO_x : combust only natural gas

Potline 5:

Process description. The potlines are where electrical current is passed through the alumina mix in a number of small “pots” or crucibles to produce aluminum. Because it is an electrical chemical heating process, and not a combustion process, very limited amounts of NO_x are emitted. Thermal NO_x is created when ambient air comes into contact with the hot surface of the alumina in the pots. Sulfur in the anode coke does react with the oxygen liberated from the alumina, resulting in emissions of SO₂. Because of the high PM control efficiency of the potline 5 GTC, minimal amounts of PM are emitted.

Existing Control. Potline emissions at the Wenatchee facility are collected by hoods and ducted the GTC control device. The GTC consists of dry scrubbing with alumina followed by fabric filtration. This control system provides control of PM, fluorides, and polycyclic organic matter (POM). It provides no control for SO₂ or NO_x.

SO₂ Control Options. As discussed in our proposed BART determination for the Intalco potlines, the Washington RH SIP Appendix L, and the ENVIRON report for the Alcoa Intalco

facility, limestone slurry forced oxidation (LSFO) is a technically feasible add-on control option for SO₂ emissions from the potlines. Several potential control technologies were evaluated by Alcoa for both the potlines and anode bake furnace, including LSFO, limestone slurry scrubbing with natural oxidation (LSNO), conventional lime wet scrubbing, seawater scrubbing, dual alkali sodium/lime scrubbing (dilute mode), conventional sodium scrubbing, dry injection, and semi-dry scrubbing. As described in the proposed EPA BART determination for Intalco and the ENVIRON Report, LNSO, conventional wet lime scrubbing and dual alkali sodium/lime scrubbing either have clear disadvantages or are likely to be more costly than LSFO. Dry scrubbing is technically infeasible for control of SO₂ emissions from the potlines because dry scrubbing requires temperatures of 250-260° F, whereas the potlines have a flue gas temperature of ~205° F. Spray dry control technology requires evaporation of the moisture introduced into the exhaust gas. Spray drying generally requires temperatures higher than those needed for dry scrubbing, thus spray drying is also technically infeasible for control of SO₂ from the potlines. Due to the inland location of the Wenatchee facility, seawater scrubbing is infeasible. The infrastructure and associated capital costs for a sodium scrubber would be similar to that of LSFO, although sodium-based reagents are generally more expensive than limestone or lime. Thus, sodium scrubbing, while technically feasible, would be less cost-effective than LSFO.

LSFO was determined to be a technically feasible retrofit control option for the potlines and the anode baking exhausts even though it is not ideally suited for scrubbing SO₂ concentrations that are less than or equal to 105 parts per million, that is the case for the Wenatchee facility.

The EPA conducted a cost analysis of LSFO scaled from the Intalco analysis to the Wenatchee facility. *See* “Alcoa Wenatchee Works Cost Analysis for Limestone Slurry Forced

Oxidation (LSFO) Scrubbing – Wenatchee, Washington,” September 18, 2013. That analysis found that the cost-effectiveness values for LSFO at the Wenatchee facility ranged from \$7500/ton to \$8500/ton of SO₂ removed.

The cost-effectiveness values are at the high end of what the EPA would generally consider reasonable unless the controls would result in significant visibility improvement in one or more Class I areas. The dispersion modeling in this instance shows that the Wenatchee facility contributes to impairment in only one Class I area at about the level of the BART threshold. Thus, due to the high cost and limited visibility improvement, we are eliminating LSFO as BART for the Wenatchee facility.

The operating permit for the Wenatchee facility currently controls SO₂ from potlines 1, 2, and 3, by limiting the sulfur content of anode coke to a maximum of 3% and SO₂ emissions are also limited to 46 pounds per ton of aluminum produced. *See* permit condition D.12. This permit condition (which represents Best Available Control Technology (BACT) as established in an EPA PSD permit) does not apply to potline 5. The same coke is used for the anodes in all four potlines. Thus, EPA understands that potline 5 currently complies with both the 3% maximum coke sulfur content and the 46 pounds per ton of aluminum produced limit currently in effect for potlines 1, 2, and 3. As such, we believe there would be no cost involved in applying these same limits to potline 5. Therefore, EPA is proposing that SO₂ BART is to limit sulfur in the anode coke for potline 5 to 3% and limit SO₂ emissions from potline 5 to 46 pounds per ton of aluminum produced.

NO_x Control Options. The potlines are electrically heated and none of the raw materials used in the potlines contain significant quantities of nitrogen. As a result, the NO_x emissions from the potlines are insignificant. Potline 5 NO_x emissions are just 4.5 t/y. We reviewed the ENVIRON

Report and agree with its determination that there are no technically feasible options to control NO_x from the potlines at Intalco. We believe that due to the similarities discussed above between the Intalco and Wenatchee facilities, the conclusions regarding NO_x controls for the potlines at the Intalco facility also apply to the Wenatchee facility. Current operating conditions therefore represent BART. Currently, the Wenatchee facility determines NO_x emissions based on an emission factor of 0.34 pounds of NO_x per ton of aluminum produced. Based on the production capacity for potline 5, NO_x emissions will be limited to 0.95 tons per calendar month.

PM Control Options. PM emissions from the potlines are currently effectively controlled by fabric filters. The existing Air Operating Permit limits PM emissions to 0.005 gr/dscf. *See* permit condition D.5. We believe that fabric filtration is the most effective PM control device for this source and a limit of 0.005 gr/dscf is an appropriate limit for a highly efficient fabric filter. We are proposing 0.005 gr/dscf as the BART emission limit for PM.

Proposed BART Limits for Potline 5

PM: 0.005 gr/dscf

SO₂: 46 pounds per ton of aluminum produced

NO_x: 0.95 tons per calendar month

Ingot Furnaces 1, 2, and 11:

Process Description, Existing Controls, and Control Options. The ingot furnaces are natural gas-fired furnaces that heat molten aluminum after it has been siphoned out of the pots, prior to casting. The furnaces are used to remove aluminum dross from the molten aluminum. In the past, they also were used to create aluminum alloys by mixing other metals with the molten aluminum. There are a total of five ingot furnaces located in the casthouse, three of which were

constructed or modified within the BART-eligibility window and are subject to BART. All ingot furnaces operate uncontrolled, and the emissions are periodically tested by facility personnel.

Emissions of visibility impairing pollutants from the three ingot furnaces subject to BART are insignificant. In total, the furnaces emit 37.1 t/y of PM_{2.5}, no SO₂, and only 2.5 t/y of NO_x. It is therefore unnecessary to control these three sources because their emissions are likely to have only a negligible impact on visibility. We are therefore proposing that BART for PM and NO_x is no additional controls beyond the continued use of natural gas as fuel. The current operating permit for the Wenatchee facility contains a PM emission limit of 0.1 gr/dscf. *See* permit condition G.1. We believe that this limit is appropriate for natural gas fired furnaces without add-on PM controls and propose to establish it as the BART emission limit for the ingot furnaces. For NO_x BART, we propose to establish a fuel specification requiring the furnaces burn only natural gas.

Proposed BART Limits for the Ingot Furnaces

PM: 0.1 gr/dscf

SO₂: BART limit not necessary because there are no SO₂ emissions

NO_x: combust only natural gas

Green Mill:

Process Description. The green mill is where “green” anodes (i.e., un-baked) are formed from a mixture of coke and petroleum pitch. The coke and pitch mixture is placed into a vibratory anode-forming mold that uses elevated temperature of the raw materials, vibration, and pressure from an overhead weight to form the coke/pitch mixture into solid green anodes. The vibratory former was installed in 1972. All emissions from the green mill, including the vibratory forming unit, are collected and sent either to the dry coke scrubber or dust collector 2.

Existing Controls. There are two air emission control devices currently operating for emissions from the green mill and vibratory forming unit. Emissions from various processes within the green mill are collected and sent either to the dry coke scrubber or dust collector 2. The dry coke scrubber is a dry scrubber using powdered coke, followed by fabric filtration. The dust collector 2 is a fabric filter.

Proposed BART Limits for Dry Coke Scrubber. The dry coke scrubber uses fabric filters to capture PM from the green mill. There is no more efficient technology for PM, thus analysis of additional PM control options is not necessary. The State has established an emission limit for this unit of 0.005 gr/dscf, which represents the capture efficiency for high efficiency fabric filters. *See* permit condition A-5. A recent source test shows this source is capable of meeting this limit. We therefore propose that 0.005 gr/dscf as the BART emission limit for PM for the dry coke scrubber.

PM: 0.005 gr/dscf

SO₂: BART limit not necessary because there are no SO₂ emissions

NO_x: BART limit not necessary because there are no NO_x emissions

Proposed BART Limits for Dust Collector 2. The dust collector 2 uses fabric filtration to capture PM from the green mill. There is no more efficient control technology for PM, so the existing technology is the basis for BART. Emissions from the dust collector 2 are 11.5 t/y. The State has established an emission limit for this unit in the operating permit for the facility at 0.1 gr/dscf. *See* permit condition A-9. However, this limit does not adequately represent the control efficiency for properly operated and maintained fabric filters. The EPA has obtained and reviewed recent source test data from the State for this emission point and finds that 0.01 gr/dscf is more representative of a properly operated and maintained fabric filter. Because BART must

be “an emission limitation based on the degree of reduction achievable” by the selected control technology, 40 CFR 51.301, and because the available data demonstrates that the existing fabric filter in dust collector 2 can readily achieve an emission limit of 0.01 gr/dscf, we are proposing it as PM BART.

PM: 0.01 gr/dscf

SO₂: BART limit not necessary because there are no SO₂ emissions

NO_x: BART limit not necessary because there are no NO_x emissions

Alumina Handling Equipment:

Process Description, Existing Controls, and Control Options. There are two alumina handling emission points. The first is a very small fabric filter dust collector on an alumina conveyance line that is identified as unit 21M. The second is a small fabric filter dust collector controlling emissions from an alumina handling unit situated above an alumina storage silo that is identified as unit 19C. Combined emissions from 21M and 19C total less than 1 t/y. Because these PM emissions are currently controlled by fabric filters, which represent high efficiency PM control, an analysis of additional PM control options is not necessary. However, due to physical constraints, PM emissions from these two units cannot be tested or measured, therefore we are proposing to establish the PM BART limits for 21M and 19C in the form of an opacity standard instead of a PM emission limitation. Because there are no SO₂ or NO_x emissions from alumina handling, BART for these pollutants is not applicable.

Proposed BART Limits for Alumina Handling Equipment 21M and 19C

PM: 20% opacity

SO₂: BART limit not necessary because there are no SO₂ emissions

NO_x: BART limit not necessary because there are no NO_x emissions

Alumina Railcar Unloading Facility:

Process Description, Existing Controls, and Control Options. The alumina railcar unloading facility is equipped with below-ground hoppers controlled by a large fabric filter and is identified as unit 43E. The PM emissions from unit 43E are 17 t/y.

Because PM emissions are currently controlled by a fabric filter, which represents high efficiency PM control, analysis of additional PM control options is not necessary. The current PM emission limit for the railcar unloading facility is the statewide PM limit of 0.1 gr/dscf. However, Alcoa provided source test data that demonstrates that unit 43E can achieve a much lower limit representative of a high efficiency fabric filter. Based on this source test data, we are proposing a PM BART emission limit of 0.005 gr/dscf. Because there are no SO₂ or NO_x emissions from the railcar unloading facility, BART for these pollutants is not applicable.

Proposed BART Limits for Alumina Railcar Unloading Facility

PM: 0.005 gr/dscf

SO₂: BART limit not necessary because there are no SO₂ emissions

NO_x: BART limit not necessary because there are no NO_x emissions

VI. New Information Relevant to the EPA's Previous Proposal

We received adverse comments on our proposed action on two FIP elements: our analysis regarding the affordability of LSFO control technology for SO₂ at the Intalco facility in Ferndale, Washington, and our demonstration that the BART Alternative for the Tesoro refinery in Anacortes, Washington provides greater reasonable progress than NO_x BART. In response to the comments regarding these specific issues, new information is now available for public review, as discussed below.

A. Affordability Analysis of LSFO at Intalco

As explained in our prior proposal, the BART Guidelines provide that even if a control technology is determined to be reasonable after consideration of all five BART factors, there may be some cases where installation of the controls will affect the viability of continued plant operations. After we initially found that SO₂ BART for the potlines at the Intalco facility was an LSFO control system, Alcoa indicated to EPA that it could not afford to install and operate LSFO. In response, we conducted an affordability analysis to confirm the company's assertion. We contracted with RTI International (RTI) to conduct the requested affordability analysis. *See* 2012 Affordability Assessment. In our December 2012 proposal, we concluded that the 2012 Affordability Assessment demonstrated that Alcoa could not afford to install LSFO at this time while maintaining the Intalco facility as a viable operation and requested comment. 77 FR 76191- 76192.

Several commenters questioned the sufficiency of the 2012 Affordability Assessment, suggesting that the analysis lacked an adequate explanation or basis for the affordability determination. The commenters alleged that the 2012 Affordability Assessment did not provide a clear argument why Alcoa cannot afford the cost of LSFO at the Intalco facility. The commenters also argued that RTI improperly relied on the OAQPS Control Cost Manual to determine the rate at which Alcoa would have to borrow funds to install LSFO when RTI should have used site-specific data. One commenter also said that the 2012 Affordability Assessment did not describe what the cost/sales ratio means, what ratio would suggest LSFO is affordable, or why the cost/sales ratio is significant in determining affordability. The commenters also pointed out that the 2012 Affordability Assessment acknowledged that a long-term power contract with the Bonneville Power Administration, which had expired at the time of the analysis, would affect the affordability analysis. Because a new long-term power contract was signed and became

effective shortly after the 2012 Affordability Assessment was finalized, the commenters asserted that it should be considered in a final affordability determination. The commenters claimed that the foundation for the EPA's conclusion was factually incorrect because the determinative fact on which the affordability conclusion was based (the existence of a long-term power supply contract) substantially changed less than a month after the 2012 Affordability Assessment was finalized. The commenters also argued that the 2012 Affordability Assessment failed to disclose what amount of power at the IP rate¹⁰ is actually necessary for Intalco to run all 3 potlines. The 2012 Affordability Assessment did not analyze whether LSFO would be affordable if Intalco were able to obtain power for two lines under a long-term contract and other power for the third. The commenters requested that the affordability analysis be redone in light of Intalco's new long-term power supply contract and other facts absent from the 2012 Affordability Assessment.

In response to these comments, we asked RTI to update its Affordability Assessment based on the availability of new and updated information. RTI considered, for example, new information regarding commodity price forecasting for the aluminum market, updated investment ratings, the December 2012 Long-Term Power Sales Agreement between Alcoa and the Bonneville Power Administration (BPA) (2012 Power Sales Agreement), and the 2012 Alcoa Annual Report. RTI completed its Revised Intalco BART SO₂ Affordability Assessment in September 2013 (Revised Affordability Assessment). The Revised Affordability Assessment includes an improved explanation of the various data used to determine financial health in the context of an affordability analysis for a BART determination. The Revised Affordability Assessment now specifically addresses the long-term power supply contract, cost/sales ratio, ability to borrow funds, the price of electricity, updated investment ratings, aluminum market conditions and other factors relevant to the affordability determination.

¹⁰ "IP rate" means the Industrial Firm Power Rate contained in BPA's 2012 Wholesale Power Rate Schedules.

RTI analyzed the information to determine the impact that requiring the LSFO control technology could have on the profitability of Alcoa and on the Intalco facility. RTI describes how it calculated the Intalco cost/sales ratio to be a range of 5.1% to 21.7%. This range of values depends on assumptions about control costs, capacity utilization, and aluminum prices. It further explains that the cost/sales ratios may be higher or lower depending on plant utilization and future aluminum prices, but that the ratios are high in even the most optimistic scenarios. RTI also suggests that even in the absence of requiring the LSFO technology, the profitability of operating Intalco is highly sensitive to external factors. The Revised Affordability Assessment describes the current demand for aluminum and the fact that several aluminum smelters in the northwest have shut down within the past 10 years. It also reviews the 2012 Power Sales Agreement and the electricity price forecasts in the northwest. It concludes that Intalco's ability to run at full capacity depends on the availability of affordable power, but explains that even with the long-term power contract, Intalco may not be able to operate profitably if additional regulatory costs are factored into the plant's operating cost. Revised Affordability Assessment at 4-4 through 4-6.

The Revised Affordability Assessment also describes why Alcoa is unlikely to be able to pass the cost of controls on to consumers. As explained, aluminum is a commodity traded on global markets, such as the London Metal Exchange. Aluminum producers can affect the cost/sales ratio by negotiating long-term contracts with alumina suppliers, but have little control over product price. In the case of Intalco, the increased costs of installing and operating LSFO would affect only this one aluminum facility, so the increased costs would have little impact on global supply. Therefore, RTI concluded, the market price would remain essentially unaffected, and Intalco would be unable to pass much, if any, of its cost increase along to its customers.

Intalco would experience increased costs due to LSFO, with little to no change in the price of its products. Revised Affordability Assessment at 4-7. As a result, its profits, per-ton and overall, could be reduced to unacceptable levels by LSFO that would likely lead to a business decision to close the facility.

As explained in the Revised Affordability Assessment, RTI also analyzed Alcoa's ability to fund using cash, or finance using debt, the control technology costs. As explained, the cost of installing and operating LSFO will represent approximately 5–21% of the facility's sales revenue over the 30-year lifetime of the equipment at current utilization. Although limited cash reserves are available, the control technology expenditure would use over 8% of Alcoa's cash reserves. Additionally, as of 2013, the credit ratings provided by Standard & Poors, Moody's, and Fitch showed that Alcoa's financial outlook was negative or under review for downgrade. Alcoa's 2013 BBB-credit rating may also limit its ability to borrow money to purchase pollution control equipment. The Revised Affordability Assessment concluded that:

[W]hile we cannot definitively determine what business decisions Alcoa will make, should installation and operation of LSFO be required, it is our belief based on our analysis and sound business practices that Alcoa would seriously consider other options, such as shifting production to other facilities, rather than installing and operating LSFO and continuing aluminum production at Intalco. Revised Affordability Assessment at 5-1.

As previously explained in our December 2012 notice, Alcoa submitted financial information to the EPA in support of its affordability claim. A portion of the information, Attachment 2 of the letter from Robert Wilt, Alcoa Inc., to Dennis McLerran, EPA Region 10 Administrator, dated June 22, 2012, was claimed as confidential business information (CBI).

Thus, Attachment 2 was not available at that time for public review. Subsequently, in accordance with EPA regulations regarding CBI at 40 CFR Part 2, the EPA asked Alcoa to substantiate its CBI claim. In response, Alcoa submitted a redacted version of Attachment 2 reducing the amount of information it claimed as confidential and providing substantiation for the redacted information. The information Alcoa continued to claim as confidential consists of several years of 'after tax' cash flow values. After considering the criteria specified in 40 CFR 2.208, the EPA made a final CBI determination finding that the redacted information constituted CBI within the meaning of the EPA's regulations. The redacted Attachment 2, the substantiation, and the final CBI determination are included in the docket for this action and are available for public review.

The additional and updated information regarding the affordability of LSFO at Intalco, including the Revised Affordability Assessment, is also included in the docket for this proposed action and is available for public review. Comments regarding this additional and updated information may be made in accordance with the procedures explained in the public comment section above. Other aspects of our previously proposed action related to Intalco are outside the scope of this notice. Accordingly, other comments we previously received in response to our December 2012 proposal related to the proposed Intalco BART and affordability determination will be responded to in a future Federal Register notice.

B. Tesoro Modeling Demonstration for BART Alternative

In our December 2012 notice, we proposed to disapprove the State's NO_x BART determination for five BART emission units at the Tesoro Refining and Marketing refinery (Tesoro) and proposed a federal BART Alternative. The proposal explained that the EPA's

proposed BART Alternative provides for greater reasonable progress towards meeting natural visibility conditions than BART.

The RHR provides two methods by which this demonstration can be made. First, if the distribution of emissions is not substantially different than under BART, and the alternative measure results in greater emission reductions, then the alternative measure may be deemed to achieve greater reasonable progress. Second, for disperse or widely distributed sources in a regional emissions trading program, dispersion modeling is to be used. 40 CFR 51.308(e)(3). Because in this case, the emission sources covered by BART and the BART Alternative are within the same facility and the distribution of emissions is not substantially different, applying the first method's emissions test would meet regulatory requirements. The demonstration in the December 2012 proposal relied on the emission test. It compared the allowed emissions under BART to the emissions that would be allowed under the BART Alternative. We determined that the BART Alternative would reduce SO₂ emissions by 1068 tons per year, which exceeds the 466 tons of NO_x per year expected to be reduced under BART. Thus, in accordance with the RHR, because the alternative measure results in greater emission reductions, the alternative "may be deemed to achieve greater reasonable progress." 40 CFR 51.308(e)(3).

Several commenters stated that even with the greater SO₂ emission reductions under the BART Alternative, the EPA made an inappropriate greater-reasonable-progress demonstration. The commenters explained that in cool moist climates (like the Pacific Northwest), the CALPUFF model predicts that the conversion of NO_x to nitrate is enhanced in the winter months. The commenters suggested that dispersion modeling should have been used to demonstrate whether the BART Alternative truly resulted in greater reasonable progress. The dispersion modeling results would compare the visibility improvement expected from the

proposed BART Alternative to the visibility improvement expected from source-specific NO_x BART. The commenters asserted that it was not sufficient for the EPA to simply compare the emission reductions expected from BART with emission reductions expected from the BART Alternative. The commenters said that SO₂ and NO_x have significantly different chemical aerosol formation mechanisms in the atmosphere, depending on meteorology. They also said that the presence of more sulfate than nitrate at a Class I area does not necessarily indicate, without more analysis, that one ton of SO₂ has more or less impact than one ton of NO_x. One commenter specifically suggested that NO_x emissions have a greater “per ton” impact on visibility than SO₂ emissions. The commenters suggested that air quality/visibility dispersion modeling, similar to the modeling used in determining whether a BART-eligible source is subject to BART, should be conducted. Therefore, the commenters argued that the EPA had not adequately shown that the Tesoro BART Alternative was in fact ‘Better than BART’.

After consideration and in response to these comments, the EPA decided that a modeling analysis was appropriate for the Tesoro ‘Better than BART’ demonstration. At the EPA’s request, Tesoro agreed to provide such a modeling demonstration. Tesoro used the ‘Modeling Protocol for Washington, Oregon, and Idaho: Protocol for the Application of the CALPUFF Modeling System Pursuant to the Best Available Retrofit Technology (BART) Regulation’ that was used for determining which BART-eligible sources were subject to BART. That protocol, as supplemented with detailed information specific to the Tesoro ‘Better than BART’ demonstration, including the Class I areas to be evaluated, parameters used for comparison (i.e., 98th percentile change in daily haze index, and maximum change in the daily haze index), and emission sources, was approved by the EPA on March 28, 2013. (The approved protocol is found in the April 11, 2013 letter from Tesoro, Appendix I). The modeling was conducted to

assess whether the visibility improvement from the BART Alternative's SO₂ emission reductions would be greater than the visibility improvement from the BART NO_x reductions. The modeling assessed both pollutants' chemical aerosol formation mechanisms and impacts on visibility. The modeling demonstrated that the visibility improvement associated with the SO₂ reductions under the BART Alternative was greater than the improvements associated with the NO_x reductions under BART.

The results of the modeling effort confirm that the BART Alternative provides greater reasonable progress toward natural conditions in all Class I areas within 300 km of the Tesoro facility over the three year baseline period. Tesoro April 11, 2013, letter Appendix 2. The Tables below show the Class I areas evaluated, the baseline impacts, the visibility impacts with BART controls, and the visibility impacts with the BART Alternative. The values shown in Table 2 are the number of days over the three-year period from 2003 through 2005 that the Tesoro facility is predicted to cause visibility impacts of greater than 0.5 dv.

TABLE 2
Tesoro 'Better Than BART' Impacts
Number of Days with a Haze Index (deciview (dv)) above 0.5 dv
2003-2005

Class I area	Baseline Impact	Impact with BART	Impact with BART Alternative
Alpine Lakes Wilderness Area	94	39	28
Glacier Peak Wilderness Area	111	48	33
Goat Rocks Wilderness Area	10	4	2
Mt. Adams Wilderness Area	9	4	1
Mt. Rainier National Park	44	21	8
North Cascades National Park	128	58	47
Olympic National	116	78	73

Park			
Pasayten Wilderness Area	31	9	2

Table 3 presents modeling results showing the 98th percentile visibility impacts of Tesoro over the same three-year period (2003-2005) at the seven Class I areas within 300 km of the Tesoro facility.

TABLE 3
Tesoro ‘Better Than BART’ Impacts
Daily Haze Index (dv)
2003-2005

(based on the 22nd highest value in three years within a Class I Area)

Class I area	Baseline Impact	Impact with BART	Impact with BART Alternative
Alpine Lakes Wilderness Area	0.932	0.639	0.558
Glacier Peak Wilderness Area	0.963	0.649	0.566
Goat Rocks Wilderness Area	0.317	0.212	0.172
Mt. Adams Wilderness Area	0.277	0.168	0.146
Mt. Rainier National Park	0.737	0.498	0.394
North Cascades National Park	1.035	0.707	0.666
Olympic National Park	1.736	1.212	1.106
Pasayten Wilderness Area	0.575	0.387	0.332

The dispersion modeling conducted for the Tesoro BART Alternative demonstrates that the BART Alternative provides for greater reasonable progress than NO_x BART at all seven Class I areas.

The new information regarding the Tesoro BART Alternative modeling demonstration, including the approved modeling protocol, Tesoro's April 11, 2013 letter explaining the

modeling results, and the modeling results (including the input files), is included in the docket for this proposed action and is available for public review. Comments regarding this additional information may be made in accordance with the procedures explained in the public comment section above. Other aspects of our previously proposed action related to the Tesoro BART Alternative are outside the scope of this notice. Accordingly, other comments we previously received in response to our December 2012 proposal related to the Tesoro BART Alternative will be responded to in a future Federal Register notice.

VII. What Action is the EPA Proposing?

The EPA is proposing to disapprove Washington's determination that the Wenatchee facility is not subject to BART, determine that the facility is subject to BART, and propose BART for the BART-eligible emission units through a FIP. The EPA is also notifying the public of new information available in the docket for this action related to our BART affordability assessment for Alcoa's Intalco facility and our previously proposed BART Alternative for the Tesoro refinery.

VII. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review.

This action is not a "significant regulatory action" under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011). The proposed FIP applies to only one facility and is not a rule of general applicability.

B. Paperwork Reduction Act

This proposed action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Under the Paperwork Reduction Act, a “collection of information” is defined as a requirement for “answers to * * * identical reporting or recordkeeping requirements imposed on ten or more persons * * *.” 44 U.S.C. 3502(3)(A). Because the proposed FIP applies to just one facility, the Paperwork Reduction Act does not apply. *See* 5 CFR 1320(c). Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. The OMB control numbers for our regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions. For

purposes of assessing the impacts of today's proposed rule on small entities, small entity is defined as: (1) A small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for profit enterprise which is independently owned and operated and is not dominant in its field. After considering the economic impacts of this proposed action on small entities, I certify that this proposed action will not have a significant economic impact on a substantial number of small entities. The FIP for the one Washington facility being proposed today does not impose any new requirements on small entities. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act (UMRA)

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on state, local, and Tribal governments and the private sector. Under section 202 of UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to state, local, and Tribal governments, in the aggregate, or to the private sector, of \$100 million or more (adjusted for inflation) in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 of UMRA do not apply when they are inconsistent with applicable law. Moreover, section 205 of UMRA allows EPA to adopt

an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Under Title II of UMRA, EPA has determined that this proposed rule does not contain a Federal mandate that may result in expenditures that exceed the inflation-adjusted UMRA threshold of \$100 million by state, local, or Tribal governments or the private sector in any 1 year. In addition, this proposed rule does not contain a significant Federal intergovernmental mandate as described by section 203 of UMRA nor does it contain any regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

Federalism (64 FR 43255, August 10, 1999) revokes and replaces Executive Orders 12612 (Federalism) and 12875 (Enhancing the Intergovernmental Partnership). Executive Order 13132 requires EPA to develop an accountable process to ensure “meaningful and timely input by state and local officials in the development of regulatory policies that have federalism implications.” “Policies that have federalism implications” is defined in the Executive Order to include regulations that have “substantial direct -effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among

the various levels of government.” Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by state and local governments, or EPA consults with state and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts state law unless the Agency consults with state and local officials early in the process of developing the proposed regulation. This action does not have federalism implications. This rule will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, because it merely addresses the state not fully meeting its regional haze SIP obligations established in the CAA. Thus, Executive Order 13132 does not apply to this action. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and local governments, EPA specifically solicits comment on this proposed rule from State and local officials.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175, entitled *Consultation and Coordination with Indian Tribal Governments* (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure “meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.” This proposed rule does not have tribal implications, as specified in Executive Order 13175 because the SIP and FIP do not have substantial direct effects on tribal governments. Thus, Executive Order 13175 does not apply to this rule. EPA specifically solicits additional comment on this proposed rule from tribal officials.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885, April 23, 1997), applies to any rule that: (1) is determined to be economically significant as defined under Executive Order 12866; and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children. EPA interprets EO 13045 as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the EO has the potential to influence the regulation. This action is not subject to EO 13045 because it implements specific standards established by Congress in statutes. However, to the extent this proposed rule will limit emissions of NO_x, SO₂, and PM₁₀ the rule will have a beneficial effect on children's health by reducing air pollution.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress,

through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking involves technical standards. EPA proposes to use American Society for Testing and Materials (ASTM) Methods and generally accepted test methods previously promulgated by EPA. Because all of these methods are generally accepted and are widely used by State and local agencies for determining compliance with similar rules, EPA believes it would be impracticable and potentially confusing to put in place methods that vary from what is already accepted. As a result, EPA believes it is unnecessary and inappropriate to consider alternative technical standards. EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially-applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994), establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. This FIP, if finalized, will limit air emissions from one facility. We have determined that this proposed rule, if finalized, will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it increases the level of environmental protection for all affected

populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low income populations.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Dated: December 13, 2013

Dennis J. McLerran
Regional Administrator
Region 10

For reasons discussed in the preamble the Environmental Protection Agency proposes to amend 40 CFR part 52 as follows:

PART 52-APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

Subpart WW-Washington

2. Section 52.2498 is amended by adding paragraph (c) to read as follows:

§ 52.2498 Visibility protection.

* * * * *

(c) The requirements of sections 169A and 169B of the Clean Air Act are not met because the plan does not include approvable provisions for protection of visibility in mandatory Class I Federal areas, specifically the Best Available Retrofit Technology (BART) requirement for regional haze visibility impairment (§ 51.308(e)). The EPA BART regulations are found in §§ 52.2500, 52.2501, and 52.2502

3. Section 52.2502 is added to read as follows.

§ 52.2502 Best available retrofit technology requirements for the Alcoa Inc. - Wenatchee Works primary aluminum smelter.

(a) *Applicability.* This section applies to the Alcoa Inc. – Wenatchee Works primary aluminum smelter located near Wenatchee, Washington and to its successors and/or assignees.

(b) *Best available retrofit technology (BART) emission limitations for Potline #5—(1) Sulfur dioxide (SO₂) emission limit.* Starting 120 days after publication, SO₂ emissions from Potline #5 must not exceed 46 pounds per ton of aluminum produced during any calendar month as calculated in paragraph (b)(1)(i) of this section.

(i) *Compliance demonstration.* SO₂ emissions, on a calendar month basis, shall be determined using the following formulas:

SO₂ emissions in pounds = (carbon ratio) x (tons of aluminum produced during the calendar month) x (% sulfur in baked anodes/100) x (% sulfur converted to SO₂/100) x (2 pounds of SO₂ per pound of sulfur)

SO₂ emissions in pounds per ton of aluminum produced = (SO₂ emissions in pounds during the calendar month) / (tons of aluminum produced during the calendar month)

(A) The carbon ratio is the calendar month average of tons of baked anodes consumed per ton of aluminum produced as determined using the baked anode consumption and aluminum production records required in paragraph (h)(2) of this section.

(B) The % sulfur in baked anodes is the calendar month average sulfur content as determined in paragraph (b)(1)(ii) of this section.

(C) The % sulfur converted to SO₂ is 90%.

(ii) *Emission monitoring.* The % sulfur of baked anodes shall be determined using ASTM Method D6376 or an alternative method approved by EPA Region 10.

(A) At a minimum, Alcoa must collect no less than four baked anode core samples during each calendar week.

(B) Calendar month average sulfur content shall be determined by averaging the sulfur content of all samples collected during the calendar month

(2) *Particulate matter (PM) emission limit.* Starting 120 days after publication, PM emissions from the Potline #5 Gas Treatment Center stack must not exceed 0.005 grains per dry standard cubic foot of exhaust gas.

(3) *Nitrogen oxides (NO_x) emission limit.* Starting 120 days after publication, NO_x emissions from Potline #5 must not exceed 0.95 tons per calendar month.

(i) *Compliance demonstration.* NO_x emissions, on a calendar month basis, shall be determined using the following formula:

NO_x emissions in tons per calendar month = (0.34 pounds of NO_x per ton of aluminum produced) x (number of tons of aluminum produced in the calendar month) / (2000 pounds per ton).

(c) *Best available retrofit technology (BART) emission limitations for Anode Bake Furnace #62.*

(1) *Sulfur dioxide (SO₂) emission limit.* Starting 120 days after publication, the sulfur content of the coke used in anode manufacturing must not exceed 3.0 percent by weight.

(i) *Compliance demonstration.* Each shipment of coke must be tested for sulfur content using ASTM Method D6376 or an alternative method approved by EPA Region 10. Written documentation from the coke supplier certifying the sulfur content is an approved alternative method.

(ii) [Reserved].

(2) *Particulate matter (PM) emission limit.* Starting 120 days after publication, the PM emissions from the anode bake furnaces stack must not exceed 0.01 grains per dry standard cubic foot of exhaust gas.

(3) *Nitrogen oxides (NO_x) emission limit.* Starting 120 days after publication, the anode bake furnaces must only combust natural gas.

(i) *Compliance demonstration.* Compliance shall be demonstrated through fuel purchase records.

(ii) [Reserved].

(d) *Best available retrofit technology (BART) emission limitations for Ingot Furnace 1 (IP-1), Ingot Furnace 2 (IP-2), and Ingot Furnace 11 (IP-11)—(1) Particulate matter (PM) emission limits.* Starting 120 days after publication, the PM emissions from each of ingot furnaces IP-1, IP-2, and IP-11 must not exceed 0.1 grains per dry standard cubic foot of exhaust gas.

(2) *Nitrogen oxides (NO_x) emission limit.* Starting 120 days after publication, each of the ingot furnaces IP-1, IP-2, and IP-11 must only combust natural gas.

(i) *Compliance demonstration.* Compliance shall be demonstrated through fuel purchase records.

(ii) [Reserved].

(e) *Best available retrofit technology (BART) particulate matter (PM) emission limitations for the Green Mill.* (1) Starting 120 days after publication, the PM emissions from the Green Mill Dry Coke Scrubber must not exceed 0.005 grains per dry standard cubic foot of exhaust gas.

(2) Starting 120 days after publication, the PM emissions from the Green Mill Dust Collector 2 must not exceed 0.01 grains per dry standard cubic foot of exhaust gas.

(f) *Best available retrofit technology (BART) particulate matter (PM) emission limitations for alumina handling operations.* (1) Starting 120 days after publication, the opacity from the alumina handling fabric filters (21M and 19C) must not exceed 20 percent.

(2) Starting 120 days after publication, the PM emissions from the alumina rail car unloading baghouse (43E) must not exceed 0.005 grains per dry standard cubic foot of exhaust gas.

(g) *Source testing.* (1) Alcoa must perform source testing to demonstrate compliance with emission limits established in this section upon request by the EPA Region 10 Administrator.

(2) The reference test method for measuring PM emissions is EPA Method 5 (40 CFR part 60, appendix A).

(3) The reference test method for measuring opacity from the alumina handling fabric filters (21M and 19C) is EPA Method 9 (40 CFR part 60, appendix A).

(4) EPA Region 10 may approve the use of an alternative to a reference test method upon an adequate demonstration by Alcoa that such alternative provides results equivalent to that of the reference method.

(h) *Recordkeeping.* Starting 120 days after publication Alcoa must keep the following records:

- (1) Alcoa must retain a copy of all calendar month potline #5 SO₂ emissions calculations.
- (2) Alcoa must maintain records of the baked anode consumption and aluminum production data used to develop the carbon ratio.
- (3) Alcoa must retain a copy of all calendar month carbon ratio and potline SO₂ emission calculations.
- (4) Alcoa must record the calendar day and calendar month production of aluminum.
- (5) Alcoa must record the calendar month average sulfur content of the baked anodes.
- (6) Alcoa must retain a copy of all calendar month potline NO_x emission calculations.
- (7) Alcoa must record the sulfur content of each shipment of coke.
- (8) Alcoa must keep fuel purchase records showing the type(s) of fuel combusted in the anode bake furnaces.
- (9) Alcoa must keep fuel purchase records showing the types(s) of fuel combusted in the ingot furnaces.
- (10) Records must be retained at the facility for at least five years and be made available to EPA Region 10 upon request.
 - (i) *Reporting.* (1) Alcoa must report SO₂ emissions by calendar month to EPA Region 10 on an annual basis at the same time as the annual compliance certification required by the Part 70 operating permit for the Alcoa plant is submitted to the Title V permitting authority.
 - (2) Alcoa must report NO_x emissions by calendar month to EPA Region 10 on an annual basis at the same time as the annual compliance certification required by the Part 70 operating permit for the Alcoa plant is submitted to the Title V permitting authority.
 - (3) Alcoa must report the sulfur content of each shipment of coke received at the facility during the compliance period to EPA Region 10 at the same time as the annual compliance certification

required by the Part 70 operating permit for the Alcoa plant is submitted to the Title V permitting authority.

(4) Alcoa must report the fuel purchase records for the anode bake furnaces and the ingot furnaces during the compliance period to EPA Region 10 at the same time as the annual compliance certification required by the Part 70 operating permit for the Alcoa plant is submitted to the Title V permitting authority.

(5) All documents and reports must be sent to EPA Region 10 electronically, in a format approved by EPA Region 10, to the following email address: R10-AirPermitReports@epa.gov